Payments for Ecosystem Services Using Product Bundles to Prevent Deforestation in Tropical Montane Cloud Forests

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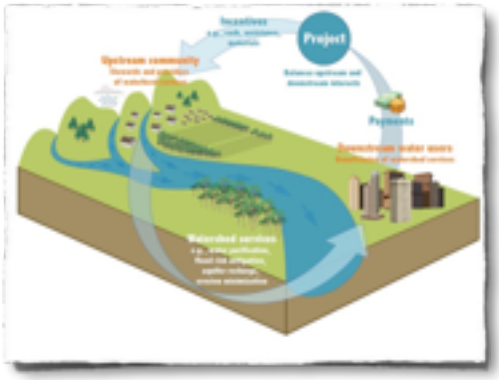
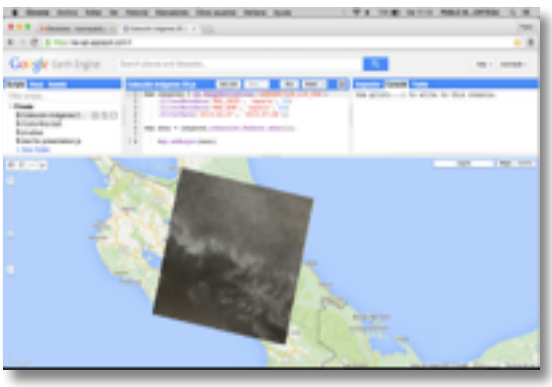


Tropical mountain cloud forests (TMCFs) represent endangered ecosystems. Although TMCFs account only for 1.4 % of the world tropical forest area, they harbor 50 % of the known neotropical higher plant species and high levels of endemism. They deliver to societies outstanding ecosystem services (ES) such as: increased water retention and quality, soil carbon sequestration and biodiversity richness. However, the main threat faced by these ecosystems is land use change to agriculture.

Despite the fact that Costa Rica has been a leading country in the implementation of payment for ecosystem services schemes (PES), the effects of these efforts in either conservation, decrease in deforestation rates or poverty reduction still remain unclear. (Sánchez-Azofeifa et al. 2007, Arriagada et al. 2012).

This research focuses on the development of a new PES scheme that combine **geospatial techniques** with a **social sciences approach**. It is aimed to deliver ES gathered in **bundles** but taking into account also socio-economic variables.



1. Geospatial analysis will be carried out with the help of **Collect Earth Tool** which is a free, open source and customizable tool for specific data collection needs developed by FAO (2015). The combined effect of ES will be measured in bundles following the assessment methodology of (García-Montero et al. 2010).

2. To understand stakeholders' perceptions and interests in designing PES, the research will combine scientific and local knowledge and a development strategy aligned with local interests instead of rigid environmental policies or socioeconomic external factors. Stakeholders will be interviewed following the Sibelet et al. (2013) methodology.

REFERENCES:

Arriagada R A., Ferraro P J., Sills E O., Pattanayak S K. and Cordero-Sancho S. 2012 . Do Payments for Environmental Services Affect Forest Cover? A Farm-Level Evaluation from Costa Rica. Land economics. 88 (2) 382-399

FAO. 2015. Collect Earth. Innovative land assessment through freely available satellite imagery. Available at: http://www.openforis.org/tools/collect-earth.html. Accessed 08 Sep 2015

García-Montero L G., López E., Monzón A and Otero Pastor I. 2010. Environmental screening tools for assessment of infrastructure plans based on biodiversity preservation and global warming (PEIT, Spain). Environmental Impact Assessment Review 30 (2010) 158-168

Sánchez-Azofeifa G., Pfaff A., Robalino J A., and Boomhover J P. 2007.Costa Rica's Payment for Environmental Services Program: Intention, Implementation, and Impact. Conservation Biology. 21 (5) 1165-73.

Sibelet N, Mutel M, Arragon P, Luye M, 2013. Qualitative survey methods applied to natural resource management. Online learning modules. Available at: http://entretiens.iamm.fr/ . Accessed 08 Sep 2015